Attitude toward Older Adults: A Matter of Cultural Value or Personal Value?

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Abstract

The current research aimed to address the inconsistent findings regarding cultural differences in attitude toward older adults by differentiating the effects of personal values and cultural values. In Study 1, we used data from the sixth wave of the World Values Survey to examine attitude toward older adults across cultures, and whether different personal values (i.e., communal vs. agentic) and country-level values (i.e., individualism) predicted these attitudes. The results of hierarchical linear modeling analyses showed that after controlling for potential covariates, communal value at the individual-level was positively correlated with positive attitude toward older adults; however, individualism score at the country-level was not. To further examine the causal effects of personal values (vs. cultural values), we conducted an experimental study and confirmed that priming personal values rather than cultural values had significant effects on ageism attitude. The present study helps to reconcile conflicting results on cultural differences in attitude toward older adults.

Keywords: Attitude toward older adults, Cross-culture differences, Individual differences, Communal value, Individualism

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Attitude toward Older Adults: A Matter of Cultural Value or Personal Value

Attitude toward older adults has been extensively studied in recent years (for review, see Kite & Johnson, 1988; Kite, Stockdale, Whitley, & Johnson, 2005), and evidence consistently shows that people hold more negative attitude toward older adults than younger adults. However, most of these studies have been conducted among North Americans or Europeans, and there are few, if any, studies directly comparing attitude toward older adults across different cultures (Luo, Zhou, Jin, Newman, & Liang, 2013; Ng, 2002; North & Fiske, 2012, 2013a; Ota, Gallois, & Giles, 2002). Moreover, this existing body of literature presents inconsistent results regarding cultural differences in attitude toward older adults. Hence, the present study attempts to reconcile these differences and extend existing theories by differentiating the effects of cultural and personal values on individuals' attitude toward older adults. We first used data from the World Values Survey to investigate how cultural and personal values (more specifically, individualistic values) predict individuals' attitude toward older adults. We then conducted an experimental study to further examine whether priming cultural or personal values can have causal effects on individuals' ageism attitude.

The Current Inconsistency

Theorists have argued that North Americans, who hold more individualistic values, do not highly value older adults; conversely, there is reason to believe East Asians (or individuals in other collectivism cultures holding less individualistic values) may value older adults for several reasons (Hummert, 2011; Levy & Langer, 1994;

Zhang, Hummert, & Garstka, 2002). The individualistic culture (e.g., American culture) due to the endorsement of self-centered satisfaction and interest, as well as freedom and individuality (Wang & Mallinckrodt, 2006), the individualistic culture (e.g., American culture) is increasingly youth-oriented with a negative bias toward older individuals (Barak, Mathur, Lee, & Zhang, 2001; McConatha, Schnell, Volkwein, Riley, & Leach, 2003; Nisbett, 2003). In contrast, Eastern collectivistic cultures (e.g., Chinese culture) are significantly more older-oriented, such that they place a stronger emphasis on honoring and supporting older people, committing oneself to family obligations, social interdependence, and self-sacrifice (Cuddy, Norton, & Fiske, 2005; Markus & Kitayama, 1991; Nisbett, 2003).

The most evident example is the practice of filial piety, which refers to the scripts on children's obligation to care for their aging parents physically, emotionally, and financially (e.g., Fairbank, Reischauer, & Craig, 1978; Ng, 1998). The responsibility and obligation set by filial piety could play a significant role in shaping Easterners' attitude toward older adults. Hence, it is often assumed that people from collectivistic cultures tend to be more traditional and collectivistic, which in turn may make them hold more positive attitude toward aging and old age than those from individualistic cultures.

Researchers also explicitly (Hummert, 2011; Zhang et al., 2002) or implicitly (Levy & Langer, 1994) argue that cultural beliefs about aging should be more positive in collectivistic (vs. individualistic) cultures. However, empirical evidence supporting this prediction is surprisingly sparse, and previous findings are somewhat mixed. For

example, a study by Ng (2002) revealed no difference in ageism attitude between Europeans and Chinese. Yet, Ota and colleagues (2002, also see Luo et al., 2013; Yun & Lachman, 2006) found opposite results, such that East Asians tended to perceive older adults as less positive than did Westerners. More recently, North and Fiske (2013a) found that Asians scored highest on the Succession, Identity, and Consumption Scale, a scale measuring prescriptive ageism. One possibility for these opposing findings might be due to different conceptualizations between individual-level and country-level values.

Values at the Individual-level and the Country-level

Researchers have long debated whether we can conceptualize culture in relation to individual traits (McCrae, 2000; Shweder, 1973). On the one hand, decades of research in cross-cultural psychology suggests that personal values are consistent with values held at the cultural-level (Kim & Markus, 1999; Markus & Kitayama, 1991, 2010; Triandis, 1989, 1996). On the other hand, some recent work suggested that personal values do not always agree with cultural values (e.g., Na et al., 2010). It has been argued that individuals internalize values at the culture level and form different self-concepts (e.g., self-construals) at the individual level (e.g., Markus & Kitayama, 1991). Previous research has demonstrated that the model of self-construals offers an important perspective in explaining how cultural differences in Individualism-Collectivism affect individuals' social cognition and behavior (Cross, Hardin, & Gercek-Swing, 2011). In addition to the self-construal model, researchers have also proposed the model of cultural norms to explain cultural differences

(Nisbett, 2003; Wan et al., 2007; Zou et al., 2009). According to this model, individuals develop perceptions of the norms (e.g., values, beliefs, life practices) widely shared among cultural members, and use these perceived cultural norms to guide their decisions and behavior (Wan et al., 2007; Zou et al., 2009).

However, there have been studies suggesting that culture-level differences and individual-level differences could not represent each other. For example, in a recent study adopting multiple tasks to test culture differences in social cognition, Na and colleagues (Na et al., 2010) suggested that "group-level constructs of any kind may not be reducible to individual-level constructs" (p. 6196). They argue that although cultural differences could be found on some measures at the country level, these differences are not always congruent with measures at the individual level. Following their argument, we propose that previous inconsistency may be due to different conceptualizations of traditional or collectivistic values.

It is plausible that people from collectivistic cultures are more likely to endorse traditional and collectivistic values, which in turn could make them hold more positive attitude toward aging and old age than those from individualistic cultures. As suggested by Na and colleagues (Na et al., 2010), this proposition might be problematic in that it mixes collectivism at the country level with personal values at the individual level, and the consequential conclusion might also be less safe (Cuddy et al., 2005; Levy & Langer, 1994). Indeed, a recent study examining perceptions of aging across cultures revealed that perceptions of aging were not significantly correlated with country level values (i.e., individualism score) but rather

related to differences in population structure (Löckenhoff et al., 2009). Hence, the present study aimed to examine the effects of *individualistic* values, at both the individual level and the cultural level, on ageism attitude. We are particularly interested in contrasting these two mechanisms that account for attitude toward older adults, i.e., personal individualistic values at the individual level and cultural individualistic values at the country level.

Study 1: Associations between Values and Attitude toward Older Adults

Study 1 examined the associations between individualistic values (both at the individual-level and cultural-level) and attitude toward older adults from 35 cultures. We conceptualized personal *individualistic* values using the interpersonal circumplex (e.g., Wiggins, 1979), which is typically defined with reference to the orthogonal dimensions of agency (dominance, power, status) and communion (friendliness, warmth, love; Wiggins, 1979). It is suggested that agency is self-oriented, and communion is other- and relationship-oriented (Asch, 1946). Wojciszke, Abele, and Baryla (2009) found that communion is a predictor of involvement in social relations and interests of others, while agency is more strongly related to respect. In the present study, personal individualistic values were measured by the Schwartz Value Survey (SVS, Schwartz, 1992), which captures similar definition as Hofstede's individualism score and is a widely used tool for measuring individual differences in personal values.

In a previous investigation, it was found that these items could form two distinctive factors, namely, communal and agentic (Fung et al., 2015; Trapnell &

Paulhus, 2012). Cultural individualistic value was represented by each country's individualism score from the Hofstede's 6 social dimensions (Hofstede, 2001), which has been widely used in previous cross-cultural comparisons at the country level (e.g., Li & Fung, 2013). According to previous literature (e.g., Kitayama & Markus, 1999, 2000), in collectivistic cultures self is perceived as part of the group, whereas individualistic cultures define self as being distinct from the group. As a result, collectivistic cultures would emphasize communal values more and agentic values less than do individualistic cultures (Abele & Wojciszke, 2007; Hofstede, 2001). We hypothesize that communal values would be positively associated with attitude toward older adults, whereas agentic values would be less positively related to attitude toward older adults.

Method

Data source

We obtained data from the sixth wave of World Values Survey (WVS), which interviewed a total of 45,363 individuals across 35 nations from 2010 to 2012. The mode of data collection was face-to-face interviews with paper-and-pencil or computer-based questionnaires.. The questionnaire was originally in English and was translated into participants' native languages. Details on questionnaire wording, fieldwork organization, and data access can be obtained at www.worldvaluessurvey.org.

Materials and Measurements

Attitude toward older adults. In Cuddy and colleagues' (2009, and Fiske,

Cuddy, & Glick, 2007) stereotype content model (also see Kite et al., 2005), it was argued that stereotypes could be classified into warmth and competence. Therefore, two items regarding "warmth" and "competence" were selected and included in the analysis. The warmth item asked participants to rate on a 5-point-Likert scale (from 0 = *not at all likely* to 4 = *very likely*) how likely it is that most people in their country would view those over 70 as *friendly*, while the competence item asked them to rate how likely it is that most people in their country would view those over 70 as *competent*. According to de-individuation theory (Prentice-Dunn & Rogers, 1982), asking them to think about most people in their country instead of the participants themselves could help to reduce social desirability.

Individual Level Variables

Demographic information. Respondents' sex (1 = *male*; 2 = *female*), age, education level (from 1 = *no formal education* to 9 = *university level education*), importance of religion (from 1 = *very important* to 4 = *not at all important*) as well as self-reported income on a 10-point scale (from 1 = *lowest in your country* to 10 = *highest in your country*) were recorded see Appendix 1), were included as potential covariates according to Kite et al. (2005).

Personal individualistic values. Personal values were measured by Items # 70 to 79. These items were drawn from the Schwartz Value Survey, with one item from each of the 10 value types (from 1 = *not at all like me* to 6 = *very much like me*), and two distinctive factors, namely, communal and agentic, were formed (Fung et al., 2015; Trapnell & Paulhus, 2012). The mean reliability as indicated by Cronbach's α

was .75 for communal value and .70 for agentic value.

Country Level Variables

Cultural individualistic value. The individualism score for each country, ranging from 0 to 100, was adopted from Hofstede (2001). A larger number indicated a higher level of individualistic value at the country level. Mean levels of communal and agentic value of each country were controlled following the recommendation from Snijders and Bosker (1999).

Control Variables

Individual demographic variables were included as controls, including sex, age, income, and religion, as these have been shown to correlate with attitude toward older adults (e.g., Kite & Johnson, 1988; Kite et al., 2005; McFadden, 1995). As suggested by previous research (e.g., Löckenhoff et al., 2009), we also controlled for several potential country-level covariates, including developing status (GDP per capital in 2010), percentage of aging population in each country, and income inequality of each country as indicated by the GINI coefficient released by the United Nations Development Programme (UNDP, 2010). A GINI value of 0 represents complete equality, whereas a value of 100 represents complete inequality.

Analysis

Hierarchical linear modeling (HLM, Raudenbush & Bryk, 2002) was conducted to investigate how demographic variables, personal values (i.e., communal and agentic), and country-level variables could correlate with attitude toward older adults. To make the data from different countries more comparable and to unify the

scale of different measures, we standardized all the individual-level data within countries, including age, education level, income, personal values, and importance of religious belief. We also standardized the country-level data across the 35 countries, including individualism, percentage of older population, GDP per capital, and GINI coefficients.

Results and Discussion

All the descriptive information across the 35 countries is summarized in Appendix 2. To test how personal values (i.e. communal and agentic) at the individual level, as well as individualism scores at the country level, could correlate with attitude toward older adults, the HLM equations were specified as follows:

The dependent variable was attitude toward older adults (i.e., warmth and competence). The individual level predictor was personal values including communal and agentic, while age, sex, education level, scale of income, and importance of religious belief were controlled. The country-level predictor included individualism score (IND), while mean level value (both communal and agentic), GDP per capital, GINI coefficient, and percentage of older population were controlled. The final equation for the model is shown below:

Individual level:

$$\begin{aligned}\text{Attitude} = {} & \beta_0 + \beta_1 \text{Age} + \beta_2 \text{Sex} + \beta_3 \text{Education} + \beta_4 \text{Income} + \\ & \beta_5 \text{Religious} + \beta_6 \text{Communal} + \beta_7 \text{Agentic} + r_{ij}\end{aligned}$$

Country level:

$$\begin{aligned}\beta_0 = {} & \gamma_{00} + \gamma_{01}\overline{\text{Communal}} + \gamma_{02}\overline{\text{Agentic}} + \gamma_{03}\text{IND} + \gamma_{04}\text{GDP} + \gamma_{05}\text{GINI} \\ & + \gamma_{06}\text{Per\_old} + u_{0j}\end{aligned}$$

$$\beta_1 = \gamma_{10} + u_{1j}$$
$$\beta_2 = \gamma_{20} + u_{2j}$$
$$\beta_3 = \gamma_{30} + u_{3j}$$
$$\beta_4 = \gamma_{40} + u_{4j}$$
$$\beta_5 = \gamma_{50} + u_{5j}$$
$$\beta_6 = \gamma_{60} + u_{6j}$$
$$\beta_7 = \gamma_{70} + u_{7j}$$

The results of the analysis are shown in Table 1. After controlling for demographic variables, it was found that at the individual level, personal communal value was significantly associated with attitude toward older adults for both warmth, (b_{communal} = .098, t = 5.65, p < .01) and competence (b_{communal} = .053, t = 2.93, p < .01). Personal agentic value was neither related to perceptions of older adults' warmth nor competence (ps > .05). Meanwhile, at the country level, individualism scores were not associated with attitude toward older adults, (b_{IND} = .000, t = .16, p = .87 for warmth, b_{IND} = -.000, t = -.02, p = .99 for competence)[1]. Moreover, we also calculated the intra-class correlation coefficient (ICC), which represents the percent of variance in attitude toward older adults that is between countries. The ICC(1) (.061 and .084 for warmth and competence, respectively) indicted that most of the variance in attitude toward older adults could be explained by factors at the individual level.

The results support our original hypothesis that personal values (i.e., communal value in this case) are more influential to participant's attitude toward older adults compared to cultural values (e.g., individualism score, Figure 1 and 2), above and beyond the effects of several well-established covariates, including age, sex, income, and country-level demographics. In addition, we found that religious belief

positively predicts attitude toward older adults. To the best of our knowledge, only McFadden (1995) has theoretically argued that traditions of certain religions (such as Judaism, Christianity, or Islam) believe that human value cannot solely depend upon productivity or youthful appearance and "admonish believers to honor elders which could promote intergenerational covenants that protect and enhance elder well-being" (p. 164).

Another notable finding was that older adults are perceived as more warm than competent (M = 2.40). However, perceived warmth of older adults has been reported much higher in some previous studies (Cuddy et al., 2009; Fiske, Cuddy, Glick, & Xu, 2002) than in the present research. We suspect that it might be due to the framing of the question in the WVS. Instead of directly asking participants to rate attitude toward older adults of their own on a 5-point-Likert scale, participants were asked to think about how *most* people in their country would view older adults. According to de-individuation theory (Prentice-Dunn & Rogers, 1982), this approach could help to reduce social desirability.

Given the nature of the cross-sectional data we used, and single item measure of attitude in the WVS, experimental studies with better assessments of attitude toward older adults are required to further confirm the causal association between personal values and attitude toward older adults.

Study 2: Experimental Replication

In the first study, the results generally supported our hypothesis that personal values (i.e., communal values) were positively associated with attitude toward older

adults while cultural values were not. In the second study, we sought to test pervious findings to further examine the causal relationship between values and attitude toward older adults. An experiment was conducted by manipulating either perceived cultural values or personal values, and we tested how personal values and cultural values could (or *could not*) influence attitude toward older adults. It was hypothesized that personal value priming would influence participants' attitude toward older adults, such that participants with communal/collectivistic personal value priming would exhibit a more positive attitude toward older adults compared with agentic/individualistic personal value priming. In contrast, it was also expected that cultural value priming would not influence participants' aging attitude.

Method

Participants. Three hundred and sixty-seven Chinese (46% female, M_{age} = 25.63, *SD* = 5.83) adults were recruited via Zhubajie (www.zhubajie.com), a Chinese crowd-sourcing online marketplace similar to Amazon's Mechanical Turk. All participants received a monetary reward of 2 RMB for participation.

Design and Measures. The present study endorsed a 2 (priming type: individualistic vs. collectivistic value priming) × 2 (priming level: cultural vs. personal value priming) factorial design. Participants were randomly assigned into one of the four conditions: the individualistic-cultural value condition, the collectivistic-cultural value condition, the individualistic-personal value condition, and the collectivistic-personal value condition.

The 56-item Schwartz Value Survey (SVS, Schwartz, 1992) was used as a

baseline measure of perceived value. This questionnaire covers 10 value types: power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security. In the present study, these value types were collapsed under two dimensions (see Trapnell & Paulhus, 2012): agentic (power, achievement, hedonism, stimulation, self-direction) and communal (universalism, benevolence, tradition, conformity, security). Participants in the *cultural* value priming condition rated the importance of each item on an 8-point scale (0 = *not important*, 7 = *very important*) for themselves. The internal consistencies of the two dimensions as indicated by *Crombach's α* were .89 and .93, respectively. For participants in the *personal* value priming condition, we adopted the perceived cultural importance approach (Wan et al., 2007) to assess baseline perceived cultural values. We specifically asked participants to complete the same SVS measure (Schwartz, 1992) with one exception: Participants were asked to estimate the importance of each value item for an average Chinese person in China instead of rating for themselves. This type of values was labeled "perceived cultural values" (e.g., Fischer, 2006). This method of measuring cultural values is consistent with a conceptual definition of "culture" as a shared, widely distributed knowledge system (Keesing, 1981). These values were again collapsed under two dimensions, namely agentic and communal (Trapnell & Paulhus, 2012), and the internal consistency of the two dimensions as indicated by *Cronbach's α* were .94 and .84, respectively.

Manipulations and Procedures. After getting participant's formal consent, they were randomly assigned to the personal value condition and the cultural value

condition. Participants in each priming level condition were asked to complete the SVS in the way described above. Then, participants in each priming level condition were again randomly assigned to two priming type conditions, namely individualistic value priming and collectivistic value priming. Afterwards, participants in the individualistic-cultural value condition and the collectivistic-cultural value condition went through a procedure that manipulated their perceived value at the *cultural* level, whereas those in the individualistic-personal value condition and the collectivistic-personal value condition were primed for their perceived value at the *personal* level.

To manipulate participants' perceived *cultural* values, we used a method adapted from previous research (Durante, Griskevicius, Simpson, Cantú, & Tybur, 2012; Griskevicius et al., 2012). All participants were asked to read one of two short articles ostensibly taken from a high-impact academic journal, which were actually generated specifically for this study. In order to make sure that participants read the article, they were asked to write a title for the article. Both articles were approximately 330 words in length. The collectivistic culture article emphasized that Chinese society is still dominated by collectivistic cultural values; whereas the individualistic culture article highlighted that nowadays individualistic cultural value is more dominant in China. This manipulation paradigm has been used in social psychology research to prime perceived social circumstances. (Griskevicius et al., 2012).

The *personal value priming* was conducted with the Similarities and

Differences with Family and Friends (SDFF) task (Trafimow, Triandis, & Goto, 1991), which has been shown to be an effective priming technique (Oyserman & Lee, 2008) to evoke individual differences in self-construal. In the individualistic priming condition, participants were given 2 minutes to write down what makes them different from their family and friends, while in collectivistic priming condition, participants were given 2 minutes to write down what they have in common with their family and friends.

After the manipulation, participants were asked to rate on 4 adjectives (i.e., warm-hearted, friendly, competent, and intelligent)[2] about their attitude toward older adults, as well as to complete the Ageism scale (North & Fiske, 2013b) on a 6-point-Likert-scale (from 1 = *disagree very much* to 6 = *agree very much*). Ageism showed good internal consistency as indicated by *Crombach's* α = .83.

Next, participants were asked to rate on a 7-point Likert scale regarding their perceived cultural values of Chinese people (for the cultural value priming group) or their own attitudes/positions toward these values (for the personal value priming). Three critical items were derived from the SVS, including: "being rich," "sacrificing for the communal good," and, "being open-minded to new things," which served as manipulation checks. The other items were: "pay attention to international affairs," "being empathetic," and, "being thrifty". Finally, demographic information was recorded including age, sex, self-rated health, and self-perceived social status[3].

Results and Discussion

Manipulation Check and Preliminary Analysis

Scores of three manipulation questions were standardized to form a composite score (with item 2 reverse coded), which was similar to the procedure to calculate standardized scores in the SVS. A larger score represented a more individualistic view of values. Univariate ANOVA with priming type (individualistic vs. collectivistic value priming) and priming level (cultural vs. personal value priming) as the between-subject factors was conducted on the composite score to examine whether different priming types indeed could evoke values differently. A significant priming type main effect was found, F (1, 363) = 9.83, $p < .01$, $\eta^2 = .03$, while the priming type × priming level interaction was not significant, F (1, 363) < 1, *n.s.*, indicating that the manipulation could evoke participant's different view of values successfully, and participants in the individualistic priming condition ($M = .33$, $SD = .62$) indeed scored higher than did participants in the collectivistic priming condition ($M = .19$, $SD = .68$).

Next, Univariate ANOVAs with priming type and priming level as the between-subject factors on demographic information were conducted. Neither main effects of priming type and priming level nor their interaction was significant for most of these variables, Fs < 3, except that a significant priming level main effect was found for age, F (1, 362) = 9.21, $p < .01$, $\eta^2 = .03$. This suggested participants in the cultural priming condition ($M = 24.75$, $SD = .6.44$) were younger than were participants in the personal value priming condition ($M = 26.69$, $SD = 4.77$). Moreover, Univariate ANOVAs with priming type as the between-subject factor were conducted on participants' baseline personal/cultural values. The results also revealed

no priming type main effect, *F*s < 2. Taken together, these results all indicated that participants in the different experimental conditions had similar characteristics (Please refer to Table 2 for detailed descriptive analysis). In the subsequent analyses, age was statistically controlled, but did not influence the results reported.

Association between Value and Attitude toward Older Adults

Mixed-model ANOVA was conducted on attitude toward older adults with attitude type (warmth vs. competence) as the within-subject factor, and priming level as the between-subject factor. A significant Priming Type × Priming Level interaction was found, F (1, 363) = 6.29, p = .01, η^2 = .02, while the Attitude Type × Priming Type × Priming Level interaction was not significant, F (1, 363) < 1, *n.s.*, suggesting that across different measures of attitude toward older adults, participants in different priming level conditions could rate attitude toward older adults differently according to their primed value types (i.e., individualistic vs. collectivistic values). To further examine the significant Priming Type × Priming Level interaction, separate mixed-model ANOVAs with attitude type as the within-subject factor and priming type as the between-subject factor were conducted for both cultural value and personal value priming conditions. The results revealed that for the cultural value priming condition, neither the priming type main effect nor the priming type × attitude type interaction was significant, F (1, 189) = .32, *n.s.*, and F (1, 189) = .33, *n.s.*, indicating that cultural value priming did not influence participant's attitude toward older adults (Warmth: collectivistic priming, M = 4.91, SD = 1.02, *vs.* individualistic priming, M = 4.92, SD = .90; Competence: collectivistic priming, M = 3.98, SD = .90,

vs. individualistic priming, $M = 4.09$, $SD = .96$). However, for the personal value priming condition, the priming type main effect was significant, $F(1, 174) = 8.66$, $p < .01$, $\eta^2 = .05$, while the priming type × attitude type interaction was not significant, $F(1, 174) = .38$, *n.s.*, indicating that participants in the collectivistic personal value priming condition tended to exhibit more a positive attitude toward older adults (Warmth: $M = 5.10$, $SD = .76$; Competence: $M = 4.56$, $SD = .94$) than did participants from the individualistic personal value priming condition (Warmth: $M = 4.72$, $SD = 1.07$; Competence: $M = 4.29$, $SD = .96$).

Similarly, Univariate ANOVA with priming type and priming level as the between-subject factors on ageism was also conducted. Neither main effects of priming type and priming level nor their interaction was significant, Fs < 2.56, *n.s.*, respectively. These results suggested that participants in different priming conditions did not differ in their ageism scores (Cultural Value Priming: collectivistic, $M = 3.20$, $SD = .67$, *vs.* individualistic, $M = 3.32$, $SD = .57$; Personal Value Priming: collectivistic, $M = 3.21$, $SD = .64$, *vs.* individualistic, $M = 3.31$, $SD = .60$; also refer to Figure 3).

Taken together, these revealed that cultural values might not influence participants' attitude toward older adults, whereas personal values played a much more important role in affecting participants' attitude toward older adults in terms of warmth and competence.

General Discussion

In the present study, we systematically investigated attitude toward older

adults and its association with personal and cultural values. Using a cross-cultural dataset (i.e., the World Values Survey), it was found that individuals' attitude toward older adults were more influenced by personal values than by cultural values. Furthermore, this finding was replicated in a follow-up experiment, in which personal values and cultural values were manipulated. Indeed, these results are consistent with previous meta-analyses suggesting that people tended to show more positive attitude toward older adults' warmth than to their competence (Kite & Johnson, 1988; Kite et al., 2005).

The focus of the present study was to contrast personal values and country-level values, and to test whether they exhibited differential correlations with attitude toward older adults. Results from the cross-cultural data (i.e., WVS) showed that individualism score at the country level did not correlate with attitude toward older adults (also refer to Figure 1 and 2), while communal value at the individual level did. This helps to reconcile the discrepancies among previous findings regarding the association between culture and attitude toward older adults (Hummert, 2011; Levy & Langer, 1994; Luo et al., 2013; Ng, 1998, 2002; North & Fiske, 2012, 2013a, 2015; Ota et al., 2002; Yun & Lachman, 2006; Zhang et al., 2002). The main effect of individual-level communal value on attitude toward older adults, together with the non-significant association of country-level individualism score with attitude toward older adults suggested that across cultures, people tend to hold a more positive attitude toward older adults if they are high in communal values.

To be more specific, analyses of the cross-cultural data (i.e., Study 1) showed

that, at the individual level, communal values (friendliness, warmth, love; Carson, 1969) were significantly associated with attitude toward older adults, such that people holding more communal values tended to rate older adults more positively. This finding supported the notion that communion is other-oriented and more closely related to liking (Asch, 1946; Wojciszke et al., 2009). The association between agentic values and attitude toward older adults was not significant, suggesting that agentic values (e.g., valuing achievement, power, and status) did not necessarily influence attitude toward older adults, which was also in line with the assumption that communal and agentic values are organized in an orthogonal system instead of two extremes in one continuum (Trapnell & Paulhus, 2012).

At the country level, we found a non-significant association between individualism score and attitude toward older adults, which might suggest that the country level value (i.e., individualism) might not be a robust influential factor; rather, it is the more micro level values (i.e., the communal value at the individual level) that could correlate with participants' attitude toward older adults. This notion was further supported by a follow-up experiment (i.e., Study 2), such that by manipulating participants' perceived personal values and cultural values, it was found that cultural values did not cause differences in participants' attitude toward older adults, whereas individual-level values lead to significant attitudinal differences. One question remaining is why personal values were stronger predictors of attitude toward older adults? Social psychologists argue that although members of a certain culture should confirm to values that are highly valued through socialization, we should also expect

individual differences in such values as they might not be socialized to the same degree, or members from different groups within that culture might even be socialized differently (Na et al., 2010). In this sense, within-group variance might have higher predictive power than between-group variance.

This finding is important in that it reconciles previous inconsistent findings regarding cultural differences in attitude toward older adults. Although country-level individualism shares some common variance with personal values (Hofstede, 2001), it might be confounded with other factors (e.g., percentage of older adults in the present study) as well, making the comparison between only two cultures less conclusive. In other words, such generalizations merely based on cultural traditions fail to capture other social and economic forces, which may contribute to the observed mixed findings in previous studies on cross-cultural differences in attitude toward older adults. Future research is needed to test the underlying mechanisms of these relationships.

The current research advances our understanding and extends existing theories, yet it is not without some limitations. First, we only measured participants' attitude toward older adults, while Kogan (1979) argued that measurement techniques that require individuals to make comparative judgments of older adults relative to younger adults evoke stronger age stereotypes than those in which individuals make isolated judgments of only older adults. Future studies might consider measuring individuals' attitudes toward both younger and older adults, for a more comprehensive understanding of attitude toward older adults. Second, we measured one specific type

of value in the present study, i.e., individualistic values, while there have been other types of values at both levels, such as power distance, uncertainty avoidance, and long-term temporal orientation (Hofstede, 2001). Future research would benefit greatly from examining the effects of these other related values on attitude toward older adults. Last but not least, we did not find any significant priming effect on ageism, only a directional trend. It may be the case that personal values can only influence general attitude, rather than specific forms, like ageism. One possible explanation could be speculated, such that Chinese might still hold a more positive attitude toward older adults as social norms (as shown in Study 1), and when directly testing ageism, people might tend to exhibit a positive-bias due to social desirability. Future studies could test this manipulation in other nations (e.g., Japan or the US) with other social norms to confirm this possibility.

Despite these limitations, this study is a good starting point for future investigations regarding the attitude toward older adults with a cross-cultural perspective. We confirmed the notion that people holding a higher level of communal value at the individual-level exhibit more positive attitude toward older adults, and this association is universal, which contributes to and reconciles the literature on cultural differences in attitude toward older adults.

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Footnote

[1.] We tested the individualism × value (communal/agentic) interaction, but it was not significant. We also tested the age × value (communal/agentic) interaction on attitude toward older adults (i.e., warmth and competence). It was found that only the age × communal value interaction could significantly predict warmth, $b = .015$, $t = 2.19$, $p = .04$. Simple slopes analysis revealed that participants holding higher communal values tended to exhibit a more positive association between age and warmth.

[2.] The adjectives were adapted from Cuddy et al. (2009) stereotype content model. Exploratory factor analysis using principle components and varimax rotation revealed a two-factor solution (i.e., warmth and competence) consistent with the stereotype content model. The internal consistencies of these two factors were high, *Cronbach's* α ranged from .64 to .86, with a mean of .76 across conditions in the present study.

[3.] We did not include a measure of self-perceived importance of religion in Study 2, although results from Study 1 suggested importance of religion to be predictive to attitude toward older adults, as about 90% Chinese adults did not hold very strong religious belief (Lu, 2014).

Table1. Multi-level Analysis of the Association between Attitude toward Older Adults and Individual- and Country-level Variables

Predictor	*Warmth*	*Competence*
Intercept		
Intercept (γ_{00})	**2.75****	**2.40****
$\overline{\text{Communal Value}}$ (γ_{01})	.237	.190
$\overline{\text{Agentic Value}}$ **(γ_{02})**	-.064	.172
Individualism Score (γ_{03})	.000	-.000
GDP per Capital in 2010 (γ_{04})	**.000****	.000
GINI Coefficient (γ_{05})	.008*	-.007
Percentage of Older Adults (γ_{06})	**-.017***	**-.016***
Age (γ_{10})	**.001***	**.003****
Sex (γ_{20})	**-.040****	**-.053****
Education level (γ_{30})	.003	-.009
Income (γ_{40})	.011	**.022****
Importance of Religion (γ_{50})	**-.053****	**-.070****
Communal Value (γ_{60})	**.098****	**.053****
Agentic Value (γ_{70})	-.017	.037
ICC	.061	.084

Note: * $p < .05$, ** $p < .01$.

ICC = intra-class correlation, represents the ratio of the between group variance to the total variance.

Table 2. Participant Characteristics in Study 2

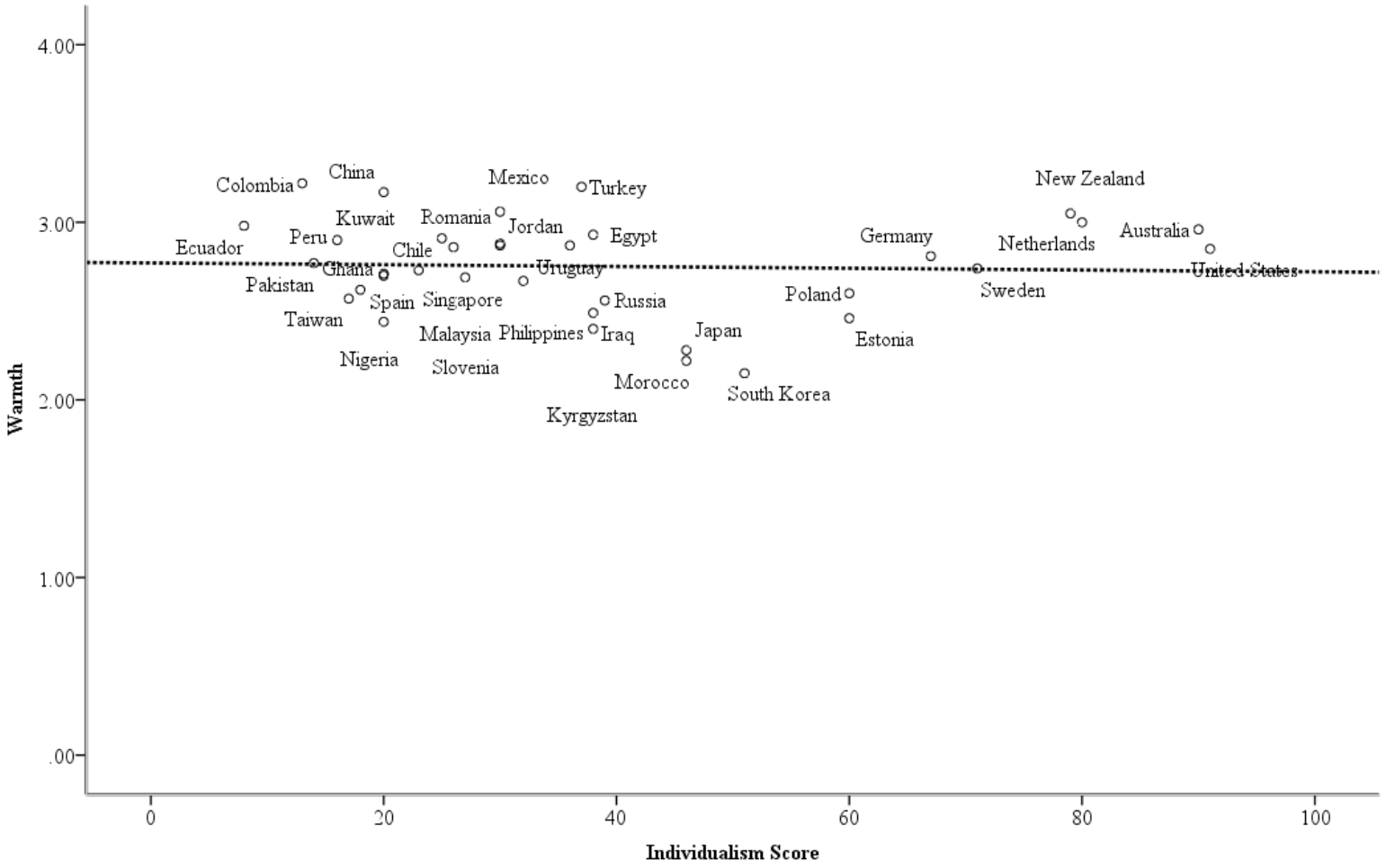
	Cultural Value Priming		Personal Value Priming	
	Individualistic (N = 96)	*Collectivistic* (N = 95)	*Individualistic* (N = 88)	*Collectivistic* (N = 88)
Age	24.43 (6.64)	25.07 (6.24)	26.69 (5.09)	26.48 (4.77)
Sex (% female)	40%	50%	41%	52%
Self-rated Health	3.35 (.99)	3.24 (1.07)	3.16 (1.00)	3.22 (.94)
Social Status	4.28 (1.41)	4.43 (1.49)	4.23 (1.52)	4.08 (1.28)
Personal Value-Communal	-.03 (.19)	-.02 (.20)	-	-
Personal Value-Agentic	-.03 (.26)	-.04 (.28)	-	-
Cultural Value-Communal	-	-	.05 (.19)	.08 (.17)
Cultural Value-Agentic	-	-	-.11 (.25)	-.11 (.24)

Figure Captions

Figure 1. Warmth as a function of cultural individualism score

Figure 2. Competence as a function of cultural individualism score

Figure 3. Value priming and attitude toward older adults


4.00
3.00
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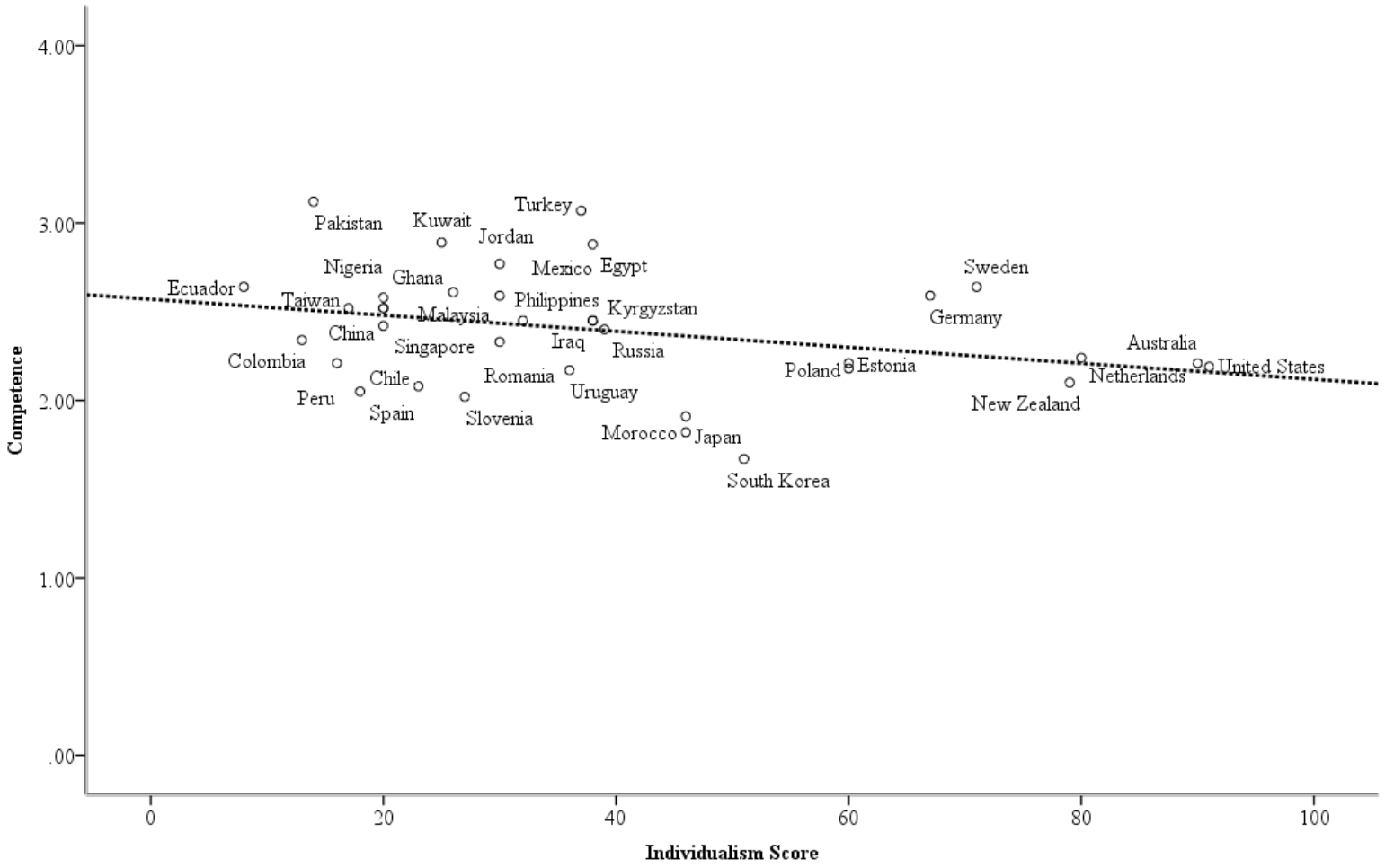
Warmth
0
20
40
60
80
100
Individualism Score
Colombia
China
Mexico
Turkey
New Zealand
Kuwait
Romania
Jordan
Egypt
Germany
Netherlands
Australia
Ecuador
Peru
Chile
Ghana
Uruguay
United States
Pakistan
Spain
Singapore
Russia
Poland
Sweden
Taiwan
Malaysia
Philippines
Iraq
Japan
Estonia
Nigeria
Slovenia
Morocco
South Korea
Kyrgyzstan


Competence
4.00
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Individualism Score
Pakistan
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Turkey
Jordan
Nigeria
Ghana
Mexico
Egypt
Ecuador
Taiwan
Philippines
Kyrgyzstan
Malaysia
China
Singapore
Iraq
Russia
Colombia
Chile
Romania
Uruguay
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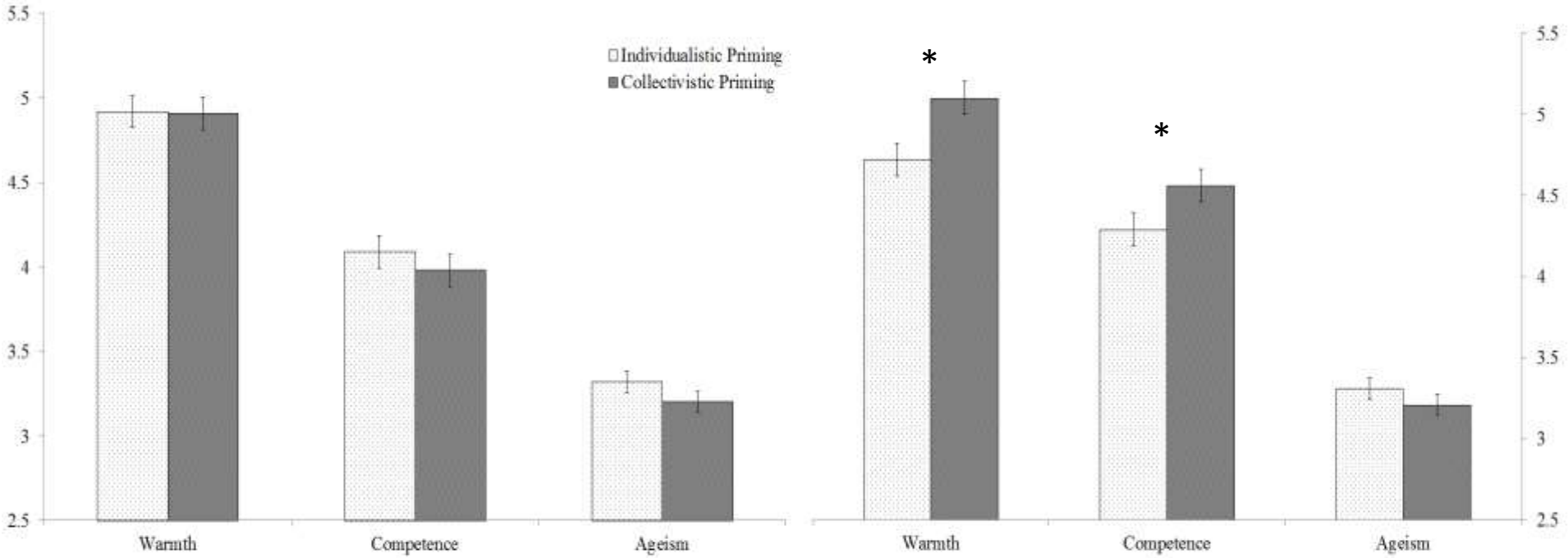
Poland
Estonia
Australia
Netherlands
United States
New Zealand



Notes. Error bars represent standard error of the mean;
The left panel represents cultural value priming, and the left panel represents personal value priming;
* indicates significant group differences.

Appendix

Appendix 1. Participant Characteristics across Cultures (Individual-Level)

Country	N	Age	Sex (%female)	Education Level	Income	Importance of Religious	Communal Value	Agentic Value
Australia	979	50.63 (16.08)	55	6.73 (2.29)	5.17 (2.09)	2.88 (1.08)	4.15 (.82)	3.22 (.86)
Chile	849	44.05 (16.30)	51	5.47 (2.05)	4.79 (1.69)	2.31 (.97)	4.63 (.94)	3.93 (.96)
China	1570	43.36 (14.74)	50	5.39 (2.31)	4.42 (1.88)	3.44 (.75)	4.25 (.77)	3.47 (.90)
Colombia	1477	40.42 (15.80)	50	5.68 (2.45)	5.05 (2.10)	1.59 (.82)	5.07 (.72)	3.83 (.93)
Ecuador	1200	39.79 (16.12)	52	5.25 (2.16)	5.00 (1.88)	1.48 (.77)	4.75 (.88)	4.11 (.86)
Egypt	1512	40.58 (15.27)	68	4.20 (2.84)	4.27 (2.01)	1.07 (.27)	4.82 (.76)	3.65 (1.01)
Estonia	1475	48.36 (18.49)	55	6.61 (1.73)	4.35 (1.81)	3.02 (.92)	4.09 (.82)	3.18 (.91)
Germany	1932	49.53 (17.59)	50	5.22 (2.26)	4.82 (1.79)	2.97 (1.01)	3.99 (.82)	3.58 (.87)
Ghana	1552	30.92 (12.70)	50	4.33 (2.20)	4.85 (2.06)	1.09 (.33)	5.11 (.63)	4.45 (.76)
Iraq	1176	36.61 (13.38)	47	4.91 (2.62)	5.35 (1.86)	1.18 (.45)	4.90 (.74)	4.12 (.83)
Japan	1519	51.41 (15.23)	48	6.83 (1.75)	4.17 (2.77)	3.11 (.88)	3.32 (.73)	2.66 (.70)
Jordan	1188	39.84 (15.48)	50	5.20 (2.49)	4.99 (2.07)	1.07 (.27)	5.14 (.75)	4.32 (.90)
Kuwait	1038	36.54 (11.99)	34	6.81 (1.96)	5.90 (2.02)	1.15 (.45)	4.83 (.95)	4.29 (.93)
Kyrgyzstan	1325	39.10 (14.39)	52	6.79 (1.92)	5.56 (2.02)	1.52 (.50)	4.41 (.95)	4.01 (.93)
Malaysia	1257	40.03 (13.92)	49	5.05 (1.90)	6.00 (1.85)	1.18 (.46)	4.74 (.84)	3.71 (.95)
Mexico	1926	37.30 (14.99)	50	5.23 (2.32)	3.32 (2.44)	1.63 (.87)	4.76 (.85)	3.60 (.89)
Morocco	971	36.67 (13.02)	49	2.84 (2.53)	4.05 (1.77)	1.14 (.39)	4.67 (.83)	3.42 (.97)
Netherlands	1516	54.74 (15.83)	51	5.92 (2.11)	4.61 (2.28)	3.09 (1.01)	3.75 (.76)	2.84 (.75)
New Zealand	667	49.91 (16.29)	57	7.55 (1.39)	5.83 (2.79)	2.79 (1.09)	4.04 (.82)	3.21 (.84)

Nigeria	1727	31.13 (11.67)	49	5.21 (2.18)	5.19 (2.13)	1.13 (.44)	4.90 (.77)	4.64 (.84)
Pakistan	1179	34.33 (11.87)	48	4.03 (2.24)	5.52 (2.14)	1.12 (.41)	4.60 (.95)	4.41 (.92)
Peru	1141	39.10 (16.26)	49	5.68 (2.15)	4.70 (1.81)	1.71 (.84)	4.52 (.92)	3.52 (.96)
Philippines	1197	42.71 (15.56)	50	5.60 (2.44)	4.20 (2.47)	1.16 (.43)	4.90 (.76)	3.97 (.87)
Poland	904	48.06 (17.48)	54	5.59 (2.13)	4.46 (1.91)	1.82 (.87)	4.70 (.69)	3.66 (.85)
Romania	1424	48.25 (17.14)	57	6.32 (1.88)	4.81 (2.15)	1.66 (.80)	4.70 (.90)	3.43 (.97)
Russia	2115	45.39 (17.24)	55	6.55 (1.79)	4.28 (1.76)	2.63 (1.01)	4.55 (.72)	4.03 (.70)
Singapore	1839	41.95 (16.61)	55	6.01 (2.35)	5.71 (1.51)	1.88 (.90)	4.25 (.74)	3.86 (.91)
Slovenia	996	49.21 (17.55)	58	5.69 (2.13)	4.92 (1.77)	2.82 (.94)	4.67 (.77)	3.59 (.85)
South Korea	1087	43.08 (14.89)	50	7.62 (1.73)	5.02 (1.78)	2.34 (1.06)	3.99 (.86)	3.61 (.88)
Spain	1020	46.44 (17.76)	50	4.73 (2.19)	4.52 (1.61)	2.97 (.99)	4.57 (.77)	3.59 (.86)
Sweden	1125	48.04 (19.13)	52	7.10 (1.92)	5.41 (1.84)	3.01 (.92)	4.07 (.78)	3.43 (.85)
Taiwan	1124	44.01 (16.68)	51	6.88 (2.27)	4.78 (1.67)	2.39 (.87)	4.33 (.76)	3.13 (.82)
Turkey	1516	38.27 (14.35)	51	5.45 (2.48)	5.70 (1.91)	1.45 (.73)	4.76 (.75)	4.22 (.82)
United States	2149	49.21 (16.79)	52	7.77 (1.31)	5.16 (1.91)	2.03 (1.05)	4.11 (.82)	3.15 (.90)
Uruguay	944	45.14 (18.26)	53	4.63 (2.03)	4.51 (1.80)	2.69 (1.11)	4.48 (.94)	3.30 (.93)

Appendix 2. Descriptive Statistics across Cultures (Country-Level)

Country	Individualism score	GINI Coefficient	Percentage of Older adults (%)	GDP per Capital in 2010	Warmth	Competence
Australia	90	35	20	51825	2.96 (.90)	2.21 (1.01)
Chile	23	52	13	12682	2.73 (.93)	2.08 (1.12)
China	20	42	12	4433	3.17 (.78)	2.52 (1.03)
Colombia	13	56	9	6180	3.22 (1.11)	2.34 (1.44)
Ecuador	8	49	9	4501	2.98 (1.13)	2.64 (.99)
Egypt	38	31	7	2804	2.93 (1.00)	2.88 (1.13)
Estonia	60	36	23	14295	2.46 (.97)	2.21 (.99)
Germany	67	28	26	40408	2.81 (.97)	2.59 (1.02)
Ghana	20	43	6	1326	2.71 (1.20)	2.58 (1.25)
Iraq	38	31	5	4613	2.49 (1.08)	2.45 (1.14)
Japan	46	25	30	43118	2.28 (.90)	1.91 (.87)
Jordan	30	35	6	4371	2.87 (1.01)	2.77 (1.03)
Kuwait	25	30	4	40091	2.91 (1.12)	2.89 (1.12)
Kyrgyzstan	38	33	7	880	2.40 (1.15)	2.45 (1.09)
Malaysia	26	46	8	8754	2.86 (.84)	2.61 (.85)
Mexico	30	47	9	8921	3.06 (1.19)	2.59 (1.29)
Morocco	46	41	8	2823	2.22 (1.35)	1.82 (1.27)
Netherlands	80	31	22	46773	3.00 (.78)	2.24 (0.97)
New Zealand	79	36	18	32846	3.05 (.92)	2.10 (1.21)
Nigeria	20	49	5	2294	2.44 (1.17)	2.52 (1.08)
Pakistan	14	30	6	1023	2.77 (1.35)	3.12 (1.10)

Peru	16	48	9	5075	2.90 (1.06)	2.21 (1.21)
Philippines	32	43	7	2136	2.67 (1.20)	2.45 (1.24)
Poland	60	33	19	12304	2.6 (1.10)	2.18 (1.11)
Romania	30	27	20	8139	2.88 (1.14)	2.33 (1.21)
Russia	39	40	18	10710	2.56 (1.12)	2.40 (1.13)
Singapore	20	42	16	46570	2.70 (.90)	2.42 (1.00)
Slovenia	27	31	22	22898	2.69 (0.92)	2.02 (.94)
South Korea	51	32	16	22151	2.15 (1.05)	1.67 (.92)
Spain	18	35	22	29732	2.62 (1.09)	2.05 (1.20)
Sweden	71	25	25	49377	2.74 (0.95)	2.64 (.95)
Taiwan	17	34	10	18603	2.57 (1.03)	2.52 (.95)
Turkey	37	40	9	10136	3.20 (.89)	3.07 (.90)
United States	91	41	18	48358	2.85 (.92)	2.19 (1.00)
Uruguay	36	45	18	11531	2.87 (1.08)	2.17 (1.19)